WHAT IS CLAIMED IS:

1. An apparatus for treating a patient comprising:

an expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and at least one microstructure having an attached end attached to the body and a free end in an undeployed position along the expandable body,

expansion of the body creating forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end projects radially outwardly from the expandable body.

2. An apparatus as in claim 1, wherein the at least one microstructure has a directional axis between the free end and the attached end, and wherein the directional axis extends along the longitudinal axis while the at least one microstructure is in the undeployed position.

3. An apparatus as in claim 1, wherein the at least one microstructure has a directional axis between the free end and the attached end, and wherein the directional axis extends across the longitudinal axis while the at least one microstructure is in the undeployed position.

4. An apparatus as in claim 1, wherein the free end has a pointed shape.

5. An apparatus as in claim 4, wherein the pointed shape includes a single point, a multiple point, an arrow shaped point including a pointed tip and at least one undercut, or a combination of these.

6. An apparatus as in claim 1, wherein the free end has a flat-edged shape.

7. An apparatus as in claim 1, further comprising a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

8. An apparatus as in claim 7, wherein the material comprises at least a gene, at least a drug or a combination of these.

9. An apparatus as in claim 7, wherein the material is coated on a surface of the at least one microstructure.

10. An apparatus as in claim 7, wherein the material is held in a lumen within the at least one microstructure.

11. An apparatus as in claim 1, wherein the expandable body comprises an endoluminal stent.

12. An apparatus as in claim 11, wherein the stent is sized for positioning within a vascular lumen.

13. An apparatus as in claim 11, wherein the stent is configured to maintain the deployed position and remain in the lumen.

14. An apparatus as in claim 1, wherein the expandable body is retractable to the undeployed position.

15. An apparatus as in claim 1, wherein the expandable body is comprised of shape-memory alloy, stainless steel, titanium, tantalum, vanadium, cobalt chromium alloy, polymer, or a combination of these.

16. An apparatus for treating a patient comprising:

a radially expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and a plurality of microstructures, each microstructure having first and second supports and a free end, the supports affixed to associate first and second adjacent portions of the radially expandable body,

expansion of the expandable body within the patient effecting relative movement between the associated first and second portions of the expandable body,

the relative movement deploying the microstructures from an undeployed position along the expandable body to a deployed position with the free end projecting radially outwardly from the expandable body.

17. An apparatus as in claim 16, wherein the at least one microstructure has a directional axis between the free end and the associate first and second adjacent

portions, and wherein the directional axis extends along the longitudinal axis while the at least one microstructure is in the undeployed position.

18. An apparatus as in claim 16, wherein the at least one microstructure has a directional axis between the free end and the associate first and second adjacent portions, and wherein the directional axis extends across the longitudinal axis while the at least one microstructure is in the undeployed position.

19. An apparatus as in claim 16, wherein the microstructures extend radially a distance of between 25 μm and 5000 μm from the radially expandable body.

20. An apparatus as in claim 16, wherein the free end has a pointed shape.

21. An apparatus as in claim 20, wherein the pointed shape includes a single point, a multiple point, an arrow shaped point including a pointed tip and at least one undercut, or a combination of these.

22. An apparatus as in claim 16, wherein the relative movement of the associated first and second portions of the expandable body comprises circumferential movement of the first portion relative to the second portion when the expandable body expands radially.

23. An apparatus as in claim 22, wherein the associated first and second portions are in circumferential alignment and the circumferential movement of the first portion relative to the second portion draws the free end toward the circumferential alignment.

24. An apparatus as in claim 22, wherein the circumferential movement pulls the affixed ends of the first and second supports apart which moves the free end.

25. An apparatus as in claim 24, the radially expandable body further comprising an interior lumen along the longitudinal axis configured for receiving an expandable member which expands the expandable body, wherein the movement of the free end creates friction against the expandable member as the expandable member expands the expandable body, the friction projecting the free end radially outwardly.

26. An apparatus as in claim 24, the radially expandable body further comprising an interior lumen along the longitudinal axis configured for receiving an expandable member which expands the expandable body, wherein expansion of the expandable body by the expandable member pulls the affixed ends of the first and second supports apart which torsionally deforms the first and second supports projecting the free end radially outwardly.

27. An apparatus as in claim 24, wherein the radially expandable body is self-expanding composed and the self-expansion of the expandable body pulls the affixed ends of the first and second supports apart which torsionally deforms the first and second supports projecting the free end radially outwardly.

28. An apparatus as in claim 16, wherein the first and second supports comprise elongate shafts extending between the free end and the associated first and second adjacent portions of the radially expandable body.

29. An apparatus as in claim 28, wherein the relative movement of the associated first and second portions of the expandable body comprises moving the associated first and second portions apart so that the supports pull the free end in opposite directions causing the free end to project radially outwardly.

30. An apparatus as in claim 28, wherein the elongate shafts are adjacent to each other and aligned with a circumference of the expandable body in the undeployed position.

31. An apparatus as in claim 16, wherein each microstructure further comprises a third support affixed to an associated third portion of the radially expandable body, the associated first and third portions being connected so as to move in unison.

32. An apparatus as in claim 31, wherein the first, second and third supports comprise elongate shafts attached to the free end and to the associated first, second and third adjacent portions of the radially expandable body, respectively, and wherein the second support is disposed longitudinally between the first and third supports.

33. An apparatus as in claim 32, wherein the relative movement of the associated first and second portions of the expandable body comprises moving the associated

first and second portions apart while the associated third portion moves in unison with the associated first portion, so that the supports pull the free end in opposite directions forming a tripod structure which projects the free end radially outwardly.

34. An apparatus as in claim 1, wherein the at least one microstructure comprises a plurality of microstructures disposed near the proximal end and/or the distal end and not therebetween.

35. An apparatus as in claim 1, wherein the at least one microstructure comprises a plurality of microstructures disposed between the proximal and distal ends and not substantially near the ends.

36. A system for treating a patient comprising:

an expandable body having a proximal end, a distal end, and at least one deployable microstructure, wherein expansion of the body deploys the at least one microstructure to project radially outward from the expandable body; and

a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

37. A system as in claim 36, wherein the material is coated on a surface of the at least one microstructure.

38. An apparatus as in claim 36, wherein the at least one microstructure includes a lumen and the material is held in the lumen.

39. An apparatus as in claim 38, wherein the expandable body further includes a delivery microsystem and the material is delivered to the lumen from the delivery microsystem.

40. An apparatus as in claim 39, wherein the delivery microsystem includes a therapeutic delivery control device which delivers the material to the lumen at predetermined intervals.

41. An apparatus as in claim 40, wherein delivery is triggered by an external signal in the form of a radiofrequency signal, an injectable chemical signal, an ultrasonic signal or a combination of these.

42. A system as in claim 36, wherein the material comprises at least a gene, at least a drug or a combination of these.

43. A system as in claim 42, wherein the material comprises a gene encoding for nitric oxide synthase or vascular endothelial growth factor.

44. A system as in claim 42, wherein the material comprises prednisone, low molecular weight heparin, low molecular weight hirudin, Rapamycin/Sirolimus, Paclitaxel, Tacrolimus, Everolimus, Tyrphostin AG 1295, CGS-21680 Hydrochloride, AM 80, Estradiol, Anti-sense compounds, E2F Decoys, or a combination of these.

45. A system as in claim 42, wherein the material comprises DNA and an adhesive material to which DNA adheres.

46. A system as in claim 42, wherein the material comprises a biocompatible material which provides a protective coating to the drugs and/or genes.

47. A method of treating a patient comprising the steps of:

providing an expandable body having a proximal end, a distal end, a longitudinal axis therebetween and at least one microstructure having an end attached to the body and a free end;

positioning the expandable body within a vessel of the patient, wherein the at least one microstructure is in an undeployed position; and

expanding the body within the vessel so that forces are created which deploy the at least one microstructure, the free ends of the deployed microstructures projecting radially outward from the expandable body.

48. A method as in claim 47, further comprising expanding the body so that the deployed at least one microstructure penetrates the vessel wall.

49. A method as in claim 48, wherein the body comprises a stent and penetration of the vessel wall anchors the stent within the vessel.

50. A method as in claim 48, wherein the wall of the vessel comprises an intimal layer, a medial layer and an adventitial layer, and wherein expanding the body penetrates the free end through at least the intimal layer.

51. A method as in claim 50, wherein expanding the body penetrates the free end through at least the medial layer.

52. A method as in claim 47, wherein expanding the body comprises inflating a inflatable member within the body so as to increase its cross-sectional diameter.

53. A method as in claim 47, wherein the body is self-expanding and expanding the body comprises releasing the body to allow self-expansion.

54. A method as in claim 47, wherein the at least one microstructure carries a material and further comprising delivering the material to the patient.

55. A method as in claim 54, further comprising expanding the body so that the deployed at least one microstructure penetrates the vessel wall, wherein the material is coated on a surface of the at least one microstructure and delivering the material comprises transferring the material from the surface of the at least one microstructure to the penetrated vessel wall.

56. A method as in claim 54, further comprising expanding the body so that the deployed at least one microstructure penetrates the vessel wall, wherein the material is held in a lumen within the at least one microstructure, and delivering the material comprises injecting the material into the penetrated vessel wall.

57. A method as in claim 54, wherein the material comprises at least a gene, at least a drug or a combination of these.

58. A method for treating a patient comprising the steps of:

providing an expandable body having a proximal end, a distal end, and at least one deployable microstructure carrying a material;

positioning the expandable body in an undeployed position within a vessel of the patient;

expanding the body to a deployed position within the vessel, wherein expansion of the structure deploys the at least one microstructure to project radially outward from the expandable body;

penetrating a wall of the vessel with the at least one microstructure; and

delivering the material from the at least one microstructure to the wall of the vessel.

59. A method as in claim 58, wherein the material is coated on a surface of the at least one microstructure and delivering the material comprises transferring the material from the surface of the at least one microstructure to the penetrated vessel wall.

60. A method as in claim 58, wherein the material is held in a lumen within the at least one microstructure, and delivering the material comprises injecting the material into the penetrated vessel wall.

61. A method as in claim 58, wherein the material comprises at least a gene, at least a drug or a combination of these.

62. A method as in claim 58, wherein expanding the body comprises inflating a inflatable member within the body so as to increase its cross-sectional diameter.

63. A method as in claim 58, wherein structure is self-expanding and expanding the structure comprises releasing the structure to allow self-expansion.

64. An apparatus for treating a patient comprising:

an expandable body having an inner ring and an outer ring surrounding a longitudinal axis; and

at least one microstructure, each microstructure having first and second supports and a free end, the first support affixed to the inner ring and a second support affixed to the outer ring,

expansion of the expandable body within the patient effecting relative movement between the inner ring and the outer ring,

the relative movement deploying the at least one microstructure from an undeployed position to a deployed position with the free end projecting radially outwardly from the expandable body.

65. An apparatus as in claim 64, wherein the first and second supports are rotateably connected near the free end.

66. An apparatus as in claim 64, wherein the microstructures extend radially a distance between 25 μm and 5000 μm from the radially expandable body.

67. An apparatus as in claim 64, wherein the free end has a pointed shape.

68. An apparatus as in claim 67, wherein the pointed shape includes a single point, a multiple point, an arrow shaped point including a pointed tip and at least one undercut, or a combination of these.

69. An apparatus as in claim 64, further comprising a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

70. An apparatus as in claim 69, wherein the material comprises at least a gene, at least a drug or a combination of these.

71. An apparatus for treating a patient comprising:

an expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and at least one microstructure having an attached end attached to the body and a free end in an undeployed position,

the at least one microstructure deployable by rotation of the free end radially outwardly from the expandable body.

72. An apparatus as in claim 71, wherein the expandable body has an outer surface and wherein the attached and free ends are aligned with the outer surface in the undeployed position.

73. An apparatus as in claim 71, wherein the expandable body has an inner lumen and the at least one microstructure has a protruding region between the attached end and the free end which protrudes into the inner lumen, the at least one microstructure deployable by applying a force to the protruding region from within the inner lumen.

74. An apparatus as in claim 73, wherein the at least one microstructure is deployable by applying force radially outwardly against the protruding region.

75. An apparatus as in claim 74, wherein the at least one microstructure is deployable by applying force radially outwardly against the protruding region by expansion of an expandable member within the inner lumen.

76. An apparatus as in claim 73, wherein the protruding region forms an angle between the attached end and the free end.

77. An apparatus as in claim 71, wherein the attached end is attached to the body by a rotateable joint.

78. An apparatus as in claim 71, further comprising a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

79. A method of treating a patient comprising the steps of:

providing an expandable body having a proximal end, a distal end, a longitudinal axis therebetween, an inner lumen and at least one microstructure having an end attached to the body, a free end and a protruding region therebetween which protrudes into the inner lumen;

positioning the expandable body within a vessel of the patient, wherein the at least one microstructure is in the undeployed position; and

applying a force against the protruding region from within the inner lumen which deploys the at least one microstructure to a deployed position wherein the free ends of the deployed microstructures project radially outwardly from the longitudinal axis.

80. A method as in claim 79, wherein applying a force against the protruding region comprises expanding an expandable member against the protruding region.

81. A method as in claim 80, wherein the expandable member comprises an inflatable member.

82. A method as in claim 79, wherein applying a force against the protruding region rotates the free end around the attached end.

83. A method as in claim 79, further comprising expanding the body so that the deployed at least one microstructure penetrates the vessel wall.

84. A method as in claim 83, wherein expanding the body comprises inflating an inflatable member within the body so as to increase its cross-sectional diameter.

85. A method as in claim 79, wherein the at least one microstructure carries a material and further comprising delivering the material to the patient.

86. A method as in claim 85, wherein the material comprises at least a gene, at least a drug or a combination of these.